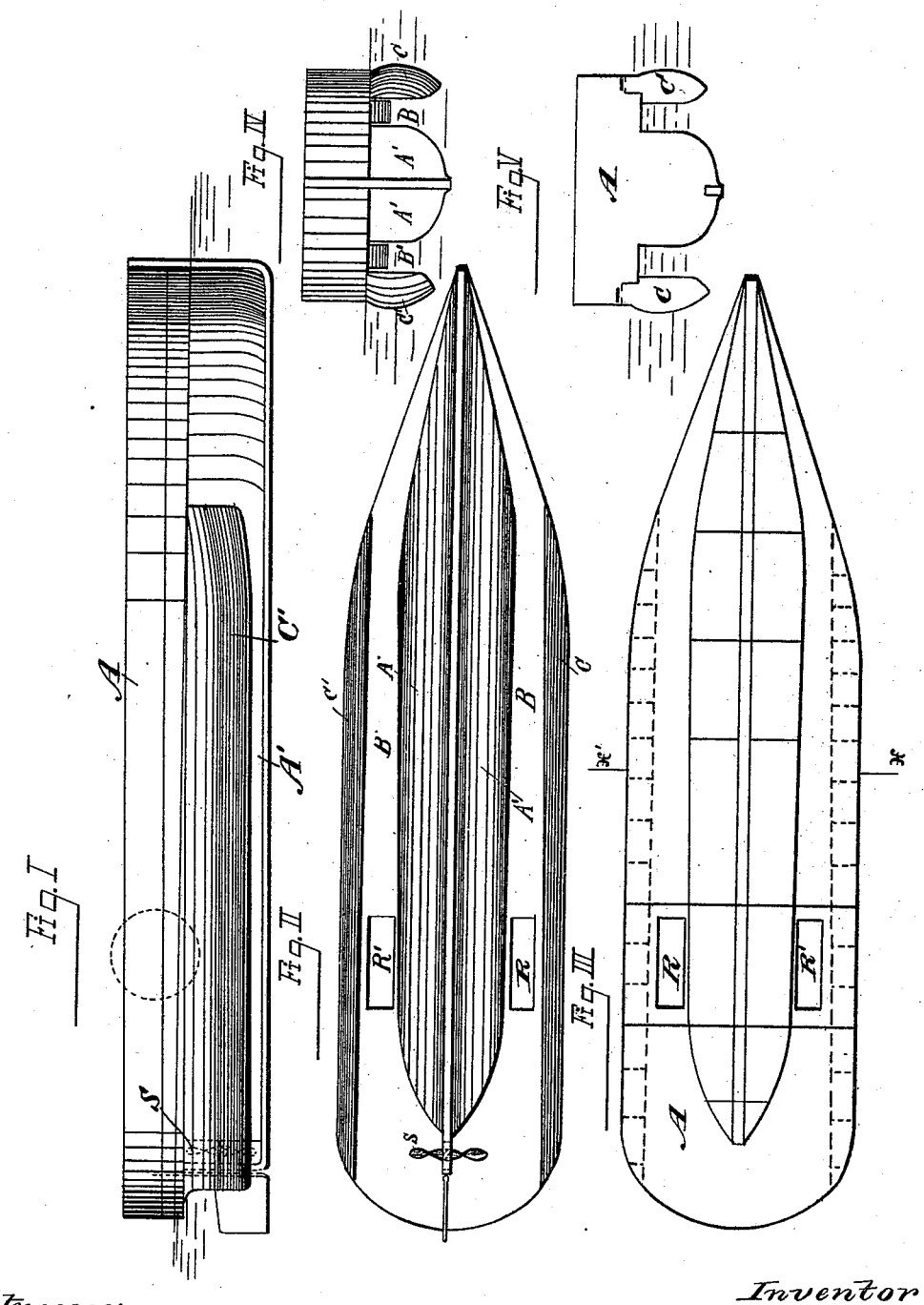
(No Model.)

# A. FOERSTE.

## SHIP.

No. 523,518. Patented July 24, 1894.

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# UNITED STATES PATENT OFFICE.

ALBERT FOERSTE, OF BERLIN, GERMANY.

## SHIP.

SPECIFICATION forming part of Letters Patent No. 523,518, dated July 24, 1894.

Application filed November 6, 1891. Serial No. 411,027. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT FOERSTE, gentleman, of Berlin, in the Kingdom of Prussia, German Empire, have invented new and useful Improvements in Ships, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of the invention is to give such a shape to the hulls of men of war or trading vessels that great velocity can be obtained on a very shallow draft, frictional resistance diminished, and the application of paddle wheels permitted and at the same time protection afforded them against projectiles and the shock of the waves.

This invention has also for its object to permit of the use of strong armor-plates for the vessel without the draft being considerably increased, and also to prevent the sudden sinking or capsizing of the vessel. And in order that my said invention may be properly understood, I have hereunto appended an explanatory sheet of drawings, whereon—

Figure I shows a vessel of the improved construction in side elevation. Fig. II is a bottom view. Fig. III is a deck view or plan. Fig. IV is a view looking at the bow. Fig. V is a section through line $x$—$x'$ of Fig. 3.

The vessel consists of the hull A, A', which differs from the usual shape in so far that it is made tapering toward the stern, and that part of it which is under the surface of the water is of the slenderest construction, so as to give a slight draft and great velocity. At both sides of the hull and firmly connected with it above the surface of the water but separated therefrom by doors are air-boxes C, C', which extend from the beginning of the bows to the stern, and are so far off the hull that passages or channels B B', are formed for allowing the water to pass through when the ship is being propelled. The air-boxes on both sides of the vessel are arranged in such a way, that the channels B, B' are narrower at the bow than at the stern, so that the resistance of the water and consequently the friction is lessened and that the air boxes C, C' may have no interfering influence on the velocity of the vessel. These air-boxes C, C' are also specially designed to render the capsizing of the vessel an impossibility, and to protect the paddle-wheels from projectiles when propelling during an engagement if the vessel is a man-of-war or if the vessel strikes against any firm object. Besides as the waves do not strike the hull directly in the channels B, B', the water in these channels will be comparatively calm and the paddle-wheels R, R', will remain in constant contact with the water, which again favorably influences the velocity of the vessel.

The current of water issuing from the channels B, B', increases the movableness of the vessel in consequence of its action on the rudder so that it is easier to turn the ship.

In the above description I have spoken merely of vessels propelled by paddle-wheels but the same construction can with equal advantage be applied on screw-vessels, (see Figs. I and II wherein the vessel is shown as having a screw S.)

The advantages of the present invention are in short, first, small draft of the ship; second, great velocity of the same; third, protection afforded to the propelling wheels; fourth, that smaller engines might be used in consequence of the above-named advantages, to produce the same velocity as with large engines and as a result of course the consumption of coal will be decreased.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. A vessel having the portion of its hull below the water line reduced, said reduced portion extending from the bow nearly to the stern, and provided with air boxes projecting downward from the main portion of the hull on opposite sides of the reduced portion and extending from the beginning of the bows to the stern, and forming with said reduced portion tapering passages substantially as described.

2. A vessel having the portion of its hull below the water line, reduced and tapering toward the stern, said reduced portion extending from the bow nearly to the stern, and provided with air boxes projecting downward from the main portion of the hull on opposite sides of the said reduced portion, said boxes extending from the beginning of the bows to the stern and forming with the reduced portion longitudinal passages which are narrower at the bow than at the stern, substantially as herein shown and described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ALBERT FOERSTE.

Witnesses:

PAUL FISCHER,

WILHELM SCHWIETHAL.